CLAIMS

What is claimed is:

1. A method for generating a halftone of a source image, the halftone including halftone pixels, the halftone pixels being suitable for containing halftone dots, the method comprising steps of:

(A) selecting glyphs corresponding to regions in the source image, the glyphs including halftone dots;

(B) selecting, from among the halftone pixels, a first halftone pixel and a second halftone pixel that share a pixel boundary;

(C) locating a first one of the halftone dots within the first halftone pixel so that the first halftone dot abuts the pixel boundary; and

(D) locating a second one of the halftone dots within the second halftone pixel so that the second halftone dot abuts the pixel boundary.

2. The method of claim 1, further comprising a step of:

(E) rendering the halftone on an output medium using an output device.

3. The method of claim 2, wherein the output device comprises a thermal printer.

4. The method of claim 2, wherein the step (E) comprises a step of:

(E) (1) rendering the first and second halftone dots as a single contiguous mark.

5. The method of claim 4, wherein the step (E)(1) comprises a step of rendering the single contiguous mark using a print head element of a thermal printer.

6. The method of claim 1, wherein the source image comprises a digital image including a two-dimensional array of source image pixels, and wherein the regions in the source image comprise the source image pixels.

7. The method of claim 6, wherein each of the glyphs corresponds to a source image pixel.

8. The method of claim 1, wherein each of the glyphs comprises a two-dimensional array of halftone pixels.

9. The method of claim 8, wherein each of the glyphs comprises one halftone pixel.

10. The method of claim 9, wherein the size of a halftone dot contained within any one of the glyphs is inversely related to the intensity of the source image

region that corresponds to the glyph.

11. The method of claim 1, wherein the first and second halftone dots are selected from one of the glyphs, and wherein the first and second halftone dots are in adjacent pixels within the selected glyph.

12. The method of claim 1, wherein the first and second halftone pixels share a pixel boundary that is perpendicular to a slow scan direction of an output device on which the halftone may be rendered.

13. The method of claim 1, wherein each of the halftone pixels has a top boundary and a bottom boundary, and wherein the method further comprises a step of:

(E) positioning a third one of the halftone dots within a third one of the halftone pixels that is adjacent to the first halftone pixel by performing steps of:

(1) if the first halftone dot abuts the top boundary of the first halftone pixel, positioning the third halftone dot to abut the bottom boundary of the third halftone pixel; and

(2) if the first halftone dot abuts the bottom boundary of the first halftone pixel, positioning the third halftone dot to abut the top boundary of the third halftone pixel.

14. The method of claim 13, wherein diagonally opposing corners of halftone pixels lie along a line at substantially a 45-degree angle to an axis of the halftone.

15. The method of claim 13, wherein diagonally opposing corners of halftone pixels lie along a line at substantially a 38-degree angle to an axis of the halftone.

16. The method of claim 1, wherein the step (A) comprises steps of:

(A) (1) identifying intensities of the regions in the source image; and

(A) (2) selecting glyphs corresponding to the identified intensities.

17. The method of claim 1, wherein the step (A) comprises steps of:

(A) (1) identifying intensities of the regions in the source image;

(A) (2) selecting glyphs corresponding to the identified intensities;

(A) (3) selecting halftone dots from the glyphs based on the coordinates of the source image regions.

18. The method of claim 1, wherein the first one of the halftone dots is contained within a first pixel of a select one of the glyphs, wherein the second one of the halftone dots is contained within a second pixel of the select one of the glyphs, and wherein:

the step (C) comprises locating the first one of the halftone dots within the first halftone pixel based on a location of the first one of the halftone dots within the first pixel of the select one of the glyphs; and wherein

the step (D) comprises locating the second one of the halftone dots within the second halftone pixel based on a location of the second one of the halftone dots within the second pixel of the select one of the glyphs.

19. A method for generating a halftone of a digital source image including a two-dimensional array of source image pixels, the halftone including halftone pixels, the halftone pixels being suitable for containing halftone dots, the method comprising steps of:

(A) selecting halftone dots corresponding to source image pixels, the size of each of the halftone dots being inversely related to the intensity of one of the source image pixels;

(B) selecting, from among the halftone pixels, a first halftone pixel and a second halftone pixel

that share a pixel boundary that is perpendicular to a slow scan direction of an output device on which the halftone may be rendered;

(C) locating a first one of the halftone dots within the first halftone pixel so that the first halftone dot abuts the pixel boundary;

(D) locating a second one of the halftone dots within the second halftone pixel so that the second halftone dot abuts the pixel boundary; and

(E) rendering the halftone on an output medium using a thermal printer, wherein the step of rendering includes a step of rendering the first and second halftone dots as a single contiguous mark.

20. A method for generating a halftone of a digital source image including a two-dimensional array of source image pixels, the halftone including halftone pixels, the halftone pixels being suitable for containing halftone dots, the method comprising steps of:

(A) identifying intensities of the source image pixels;

(B) selecting glyphs corresponding to the identified intensities, the glyphs including halftone dots;

(C) selecting halftone dots from the glyphs based on the coordinates of the source image pixels;

(D) selecting, from among the halftone pixels, a first halftone pixel and a second halftone pixel that share a pixel boundary that is perpendicular to a slow scan direction of an output device on which the halftone may be rendered;

(E) locating a first one of the halftone dots within the first halftone pixel so that the first halftone dot abuts the pixel boundary;

(F) locating a second one of the halftone dots within the second halftone pixel so that the second halftone dot abuts the pixel boundary; and

(G) rendering the halftone on an output medium using a thermal printer, wherein the step of rendering includes a step of rendering the first and second halftone dots as a single contiguous mark.